

1. You

You perceive.
Perception isn't perfect,
it's assembled. Our minds
construct percepts.
Detection and perception
flow as signals through
our neurons.

How does a neuron work?
It reaches out, repeats,
and recalls.

How do neurons work in
concert?
They fire together, and
wire together.

2. Pruning

The neural landscape is
made of connections.

Pruning is the management
(selective elimination)
of these connections
as a person matures.

Over- and under-pruning
can lead to, for example,
autism.

3. Material

The Western tradition
follows Descartes' dualism,
which says there's something
essential, ideal, and
spiritual that makes up the
mind (as opposed to the
brain.)

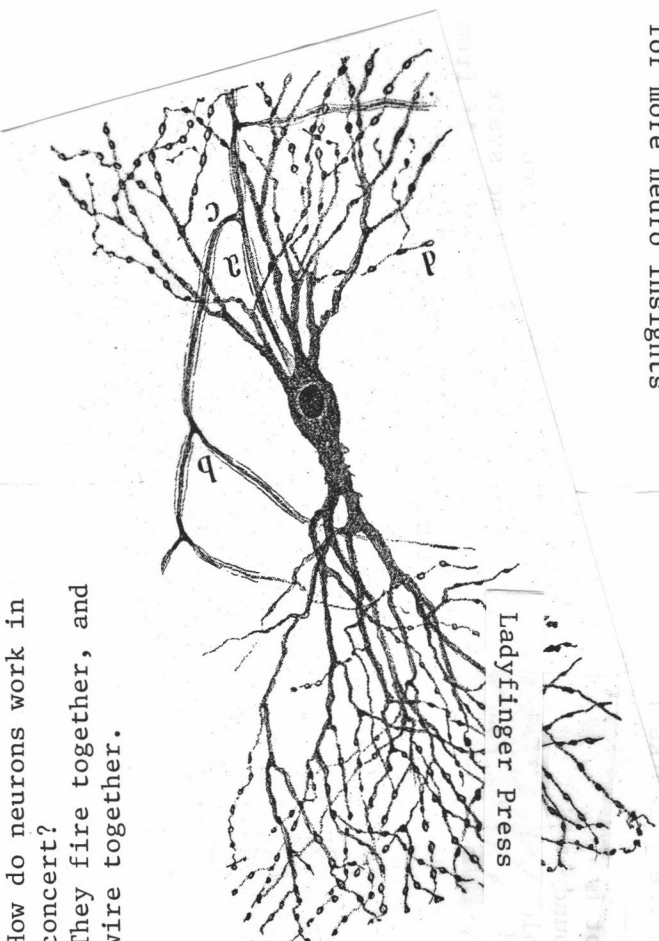
Opposing this spiritual view
is materialism, which could
also be called a physicalism:
meaning what's there is
there, what's not is not,
and the mind can be under-
stood by looking at the
physical matter of the
brain.

4. Embodiment

When we look at the
brain materially, we're
led to look at it within
the physicality of our
bodies. Existing in and of
a body, or embodiment,
is part of a bundle called
4E cognition. They are:

- Embodiment
- Embedding
- Enaction
- Extension

The embodiment part may
sound obvious, but it's
taken a lot of incremental
scholarship to get there.



Ladyfinger Press

Introduction to
Neuroconcepts
as used in our
Education Series

The Brain, Pt 1

morganstern.33 on Signal
tumblr.com/ladyfingerpress
Read our Autism series
for more neuro insights

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5. Feedback

Feedback governs the way we
interpret reality--
whether it arises from our
bodies or the world around
us. When feedback tightly
conforms to our intentions
and predictions, we feel it
as self-generated.
When it resists or surprises,
it is cast as external,
other. This divide gives
rise to the boundary we
call the self.

Unfold and reverse
this document
to continue

5. Extension

4E's extended mind may
seem to contradict the
internalist feel of the
material view: the thesis
says the mind reaches out
into the world, including
and partly comprising the
tools we use to help us
plan and remember.
But there's no contradiction.
The physical stuff of your
brain doesn't natively
distinguish between inside
and out, self and other.

Environmental feedback is
negotiated for this.

11. Connectionism

Further broadening, social cognition is made of connections. So is the microstructure of the brain, out to the abstract structure of your thoughts. Everything is connectionist.

These connections create an internal stability to the networks they make up--a structure that may not have a fundamental foundation that's "actually" holding it up.

12. The Illusion

Now for a wondrous thought. Does this mean there's nothing "actually" holding you up? Some traditions call the self an illusion. Too much? Maybe call it a direction: inward and forward. Too little? Then say it's a pruned and connected realm, bound in time to repetition by difference, making up an ongoing, constructed prediction that's never fully satisfied and can't be entirely understood from inside. Indeed no system can see its whole self from within, think of Goedel's famous paradox.

13. The Word

Does illusion mean pointless? Does it mean that as brains, we can't understand the brain? Perhaps. But the preceding isn't fact. Nothing of churning knowledge is total fact, nor absolute consensus, nor thudding conclusion. Here's another curious thought: written science is made of words.

"Consciousness," too, is merely a word which we connect to other words as pleases us.

14. The Critical

This is our last word. The great frontier of brain research today is the critical brain: the razor's edge between order and chaos.

Criticality is an energetic field that feels almost like magic. That's where I want to go. Come with me. You know where I'm coming from now. So let's go together.

Keep reading and meet me again,

Morgan Stern

10. The Social

Materialism may seem to imply individualism. But our brains process socially. Even in the absence of people to talk to, the brain makes divisions within and negotiates as if multiple. Think of your internal dialog, Wilson in "Castaway," disassociative identity disorder, and Internal Family Systems therapy.

9. The Embedded

This is the final E in Embeddedness means we exist within our contexts and in relation to them, not as isolated elements. "Islands," as Not as

8. Enaction

In the West, we tend to believe in belief. Our beliefs lead our understanding and balance our explanations. We hold our beliefs dear. Returning the model, belief elevates action over belief.

7. Predictive Processing

Experience what's outside of forming and satisfying predictions and managing discrepancies when they're not met. This management overruns our intentions. We try to exercise our skills as predictions of what we can make them.